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## HOW FAR IS THE PRESENT HIGH-SCHOOL AND EARLY COLLEGE TRAINING ADAPTED TO THE NATURE AND NEEDS OF ADOLESCENTS?<sup>1</sup>

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THE remarkable advances made within the last decade or two in our knowledge of adolescence are marking an epoch and are destined to radically modify our ideas of secondary and, to some extent, higher education, and in the near future to revolutionize some of the tendencies now dominant. The teens are the age of acquisition of the later and more precious stages of human development, because in them man is more radically differentiated from animals. It is precisely these, unfortunately, that may be most easily aborted in their nascent periods by a little overwork, worry, exposure, deficient food, and other causes which would not affect the earlier stages of growth. Before this period children need much drill, habituation, authority, and memory work; but as adolescence slowly supervenes and boyhood is molted, the method of freedom and appeal to interest and spontaneity should be increased. Now the best things are springing up in the human soul. If there is any genius or talent, enthusiasm for work or for ideals, they begin now to be felt. It is spring in the soul. If the race is ever to advance, it will not be by increasing average longevity or directly by enriching the last stages of life, but by prolonging this period of development so that youth shall not die out and its zest and enthusiasm grow pale.

This brings me to the single point in this wide field of which I would speak today. There are two standpoints from which everything can be regarded—the logical and the genetic. One is the method of system, and the other that of evolution. One develops; the other organizes. One is more dominant

<sup>1</sup>Read before the New England Association of Colleges and Secondary Schools October 9, 1901.

in the biological and the other in the physical sciences and mathematics. One looks more at form ; the other at content. In studying the soul one seeks to explore and schematize the adult mind ; the other cross-sections this method and considers the psychic functions of animals, children, savages, and defectives as well. The man who is most developed himself, or in whom severe illness or conversion in a too drastic, literal sense has made some break with his past life, is most liable, without special studies, to forget that growth is the one and only test of values in the world of education in its largest sense, and that even church, home, and state, as well as school, are to be ultimately measured only by their making an environment in which man can attain an ever higher and more complete maturity. The great organizers in education, therefore, are constitutionally in danger of distrusting youth and their endeavors to be one-sidedly scholiocentric ; while those whose watchword is development, and who believe in nature and seek first of all to have the warrant of her great push upward behind them are paidocentric, and hold that everything in the school—buildings, topics, and methods—were made for youth, and not *vice versa*. Logic has no place for interest, and deems it, if not merely a convenient expedient, something not essential and organic ; perhaps dispraises information topics or subjects, or thinks all alike educational. The latter regards knowledge not as an end, but as a means to larger living ; would conserve the child in the man ; holds that studies in which there is no pleasure can have only limited profit ; and appeals for its sanctions to the biographies of the great leaders in the world of learning. The logical standpoint persists in the methods of drill and training proper for childhood and the stage of apprenticeship to authority ; wishes to cultivate exactness and accuracy before its time ; and has had much to do with the sad fact that the American high school, despite the rare opportunity that has come to it above all European systems, that its beginning marks the dawn of this critical age, has remained more oblivious and unresponsive to its nature and needs than perhaps any other institution ever devised for it. We teach Latin, but ignore the fact that in ancient Rome

all educational lines converged to the youth of seventeen and diverged from him. Our Greek scholars have not profited from the fact that no race ever knew youth so well, loved and idealized it so strongly, and kept their own life and history the best illustration of the eternally youthful in art, letters, and institutions. We teach the history of education and pedagogy, but forget the fact that it began at this period, when nature almost reduces the psychic life back to infancy and then widens upward toward the university and downward toward the kindergarten, in almost exact proportion, as civilization advances. We place perhaps the most trying of examinations, of a kind that cultivate the memory pouches, just at that age when teaching should be suggestive, so as to sink deep, as if trying to cultivate the power of rumination instead of the ulterior processes of assimilation. We make too small appeal to the imagination at the age when every youth should be an idealist, if his soul is not made sterile, and incessantly analyze to secure so-called formal discipline, just as Aristotle says the mind totalizes, wants the largest wholes and great principles, forgetting that mental, like dynamic energy, must be developed over a large surface in order to be applied at a small one, and that the prime thing at this stage is to train character, to awaken, to graft interests, to give range and loftiness of sentiment and of view, and that the Greek teacher of youth chose to be called an inspirer.

From the genetic standpoint, let us now briefly consider a few high-school topics.

Physics, *e. g.*, was selected as one of the representative sciences and has had the benefit of the best fostering care of colleges, both in the prominence it has had among entrance requirements and the rare care and ability with which its subject-matter has been wrought over in text-books and courses, so that everything that expert knowledge and the authority that works from above downward, reinforced by the advocates of unity, system, and enrichment could do for it has been done. Yet in the country at large, from the year 1893-4, following that of the publication of the Committee of Ten, when 25.29 per cent. of all the secondary students in public high schools in the country

were studying it, it has steadily declined to 20.20 per cent. in 1898-9. Nearly half this number is girls. The relatively progressive neglect of physics in the high schools is also widespread among colleges, which President Eliot notes with sadness in his report, but does not explain. As this subject was selected as a typical science to lead the movement for introducing others, this result is especially deplorable for the new education in science, and has given the advocates of Latin, mathematics, and modern languages, all of which have increased in the same period, grounds against the introduction of science in high schools, which some of them have not been slow to use.

From questionnaire and other data it seems to me plain and certain that the trouble with physics is simply that it has failed to take account of the nature, needs, and interests of high-school boys and girls. The text-books in physics are essentially quantitative and require great exactness, and are largely devoted to precise measurements. The topics are admirably chosen, and in their logical sequence perhaps the best from the logical standpoint, and they are such models of condensation and enrichment that it seems to the organizer almost perversion that our youth pass it by. But boys of this age want more dynamic physics. Like Maxwell, when a boy, they are interested chiefly in the "go" of things; those with aptitudes for physics want and need wide acquaintance first with tops, kites, and other physical toys, then with clocks, dynamos, engines, machinery, with some experience in running it and using tools; in looking into, taking apart and putting together almost anything that will go. Moreover, exactness comes relatively late in the development of the youthful mind as it did in that of the race, long after interest in general principles and especially forces.

The normal boy in the middle teens is often a walking interrogation point about ether, atoms, nature of electricity, X-rays, motors of many kinds, with a special gravity of mind toward frontier questions where the great masters know as little as he. He would like to see hundreds of demonstrative experiments made in physics and the liberty to repeat most of them himself, without being bothered about mathematics. Moreover, he has

a veritable passion for brief stories of great men. The heroology of the history of physics, if rightly applied, might generate a momentum of interest that would even take him through the modern course. He is essentially in the popular science age. He wants great wholes, facts in profusion, and very few formulæ. If he has had the very rare good fortune to have all this in the home environment of perhaps the son of a professor of physics beforehand, this course would be well. But as it is interest wanes, not so much because the work is difficult, as to a mind scantily furnished it seems dry and formal. If the course is taken to the end, there is more satiety and fatigue than hungry curiosity about it on entering college.

The whole story of physics suggests the old tale of the duck farmer who was also a chemist, whose researches showed him conclusively that one thing that would fatten the eider duck most cheaply and rapidly and give its flesh a delicacy that no epicure could resist, was celery; but when his duck farm was finished and complete he found celery to be almost the only thing that his fool ducks could never be induced to touch. So all the educational legislation and curricularization in the world will forever abort if it does not take careful heed of the interests and capacities of pupils. It was perhaps one of the most eminent physiologists of the last half century who after long study thought he could artificially digest certain foods in retorts so completely that by injecting the pure chyme of it into the aorta he could dispose with all the preliminary stages of digestion that were performed in the alimentary canal, and by thus freeing the energy so used for culture could mark a far greater epoch upward in the race than that caused by the descent or control of fire and by cooking. Fortunately, he tried his experiment first on dogs, rabbits and guinea pigs; for all died of too much richness and condensation.

In 1899, 239,981 students in American public high schools were studying Latin, of whom 47.55 per cent. were male and 52.45 were female. The increase from 34.69 per cent. in 1890 has been quite steady. In the eight years preceding 1898, while the total high-school enrollment increased 84 per cent., the pupils

in Latin increased 174 per cent., or twice as fast. It was taught in 4,706 of the 5,495 public high schools in the country and taken by 16,672 more students in 1899 than in 1898. This is all the more remarkable when we find that the proportion of high-school pupils in the country, who are reported as fitting for college in any grade, has declined from 14.44 per cent. in 1890 to 11.54 per cent. in 1899; that in Massachusetts, where there are 13,563 high-school pupils the first year, there are only 4,655 who enter the fourth year, and in 1899, 818 who went to college, or an average of about  $3\frac{1}{3}$ , were from the 244 Massachusetts high schools. While we have no direct statistics upon that subject, it is plain that the great majority of those who begin Latin in the public high schools not only do not enter any higher institution, but do not graduate from the high school. In Massachusetts only half those who enter the first reach the third year, and only a little over one-third of them reach the fourth year. It would be interesting to know, what I can find no statistics to tell, whether it is not mostly these embryo Latinists who drop out limp, discouraged, and disappointed. This fact constitutes an extraordinary situation, which classicists think a triumphant vindication of their claims of the inherent culture power of Latin, which the public at last recognizes, and a defeat of those who would establish science. It seems a victory of the old college idea. Some Latinists take bolder and more advanced grounds and agree with Bennett, who urges that language is the supreme instrument of culture, and Latin is the supreme language for education. Whereas Latin was formally defined as a good thing to know well, Bennett argues that its best use is for those who go but a little way in it; that it is a better drill in English than English itself, and better than French and German, because these are so soon and easily acquired to the point where they are read without translating as we go along into the vernacular. Just as soon, he says, as the content dominates words, "the mind is carried away by the general sense and the details and shades of expression escape." The end is linguistic, not literary; thought must not move too freely in the new language; proficiency in it must not go too far; and even after we know it pretty well we must persist

in translating into English as we read. The highest value of this choicest topic is not only for beginners, but, says Bennett, for those of average ability. Only for those exceptionally gifted is the study of the mother tongue alone sufficient, and its educational value cannot be secured by those much below the average ability. If this is not so, he says tens of thousands of high-school pupils are making a prodigious and most wasteful error, and the sooner we recognize it, the better for our civilization. This latter alternative, I deliberately believe, and hold that the modern Latin craze is calamitous to the point of pathos, especially in view of the urgent need of other topics.

The facts needed for a full explanation of this rage for Latin are not all yet at hand; many of the causes are external; in some high schools Latin is required for the first year or longer; in others strongly advised. Again, as the high school in a sense sprung from the old Latin school, it still means Latin to a large part of the community, most so it appears among Roman Catholics, and there are many indications that the percentage of girls studying Latin will soon exceed that of boys. Latin, too, has acquired much momentum by inheritance from the old but often defunct English grammar with parsing and analysis. Those who hope and wish to teach find it next to algebra the safest investment, and it is the best students who hope to teach. Again, it is one of the cheap subjects to teach, especially as compared with science, and Latin teaching is more open to women than science.

The chief cause, however, I believe is its prestige and tradition, which are prodigious. This superstitious reverence of Latin has a second illustration in the autobiography of Booker Washington, who says that during the reconstruction period from 1867 to 1868, the colored people had two crazes—to know the classical languages and to hold office. It was felt, he adds, that “a knowledge, however little, of Latin, would make one a very superior human being, bordering almost on the supernatural,” and he conceives a large part of all his own mission among his race to be the overcoming of these two passions. Latin is or has been so inexorably demanded by the college gatekeepers that to



omit it on entering the high school has often meant to abandon all chance of going to college, however faint the prospect be. So thoroughly are even public high schools permeated to the saturation point with academic interests that work from the higher institutions downward, and so as yet unformulated and dumb is the sentiment of the people who founded and supported the public high schools to fit for life instead of for college, that perhaps nothing in our whole system of education better illustrates how extreme one tendency may become in a transition epoch before the inevitable reaction.

I will not raise here the ghost of the old discussion which has raged about the classics, but I do protest that everything we know of nature and needs at this age cries out against making the early stages of Latin, for those who will soon drop it, the best study they could select, and I urge that this new craze for Latin rudiments involves losses no less than tragic, whether we consider the arbitrary and conventional reasons of choice, the purely formal nature of the training just at the age when the soul most hungers for substantial courses now so well supplied and which are so much better for all that great majority who enter the high school and leave before graduating.

The careful recent studies of truancy and runaways show that most occur in the early teens and are due to unconscious hunger caused by bad home dietaries; so I am convinced that mental mal-nutrition, thus caused at the age when the appetite for content studies is at its height, by thus offering a stone to those who cry for bread, is responsible for the rapidly decreasing numbers as we go up the grades of the high school. While the influence that has lately worked from above downward has done great good in many ways, I believe that we have here one of the worst results of the invasion of the high school by the college, which began with the report of the Committee of Ten, with its crude and obsolete faculty psychology of culture values and its complete ignoring, not only of every genetic principle, but even that there was a genetic standpoint, and culminated in the able but perverse and unpedagogical arguments of Bennett.

Moreover, as compared with science, Latin is not only cheap,

but an easy subject to teach. In few branches does a little knowledge go so far with a teacher, and in few can it be used in such an imposing way to drill and break in boys on a small capital of knowledge on the teacher's part. We have here hardly raised the practical question of the Frankfurt method of teaching a modern language a year or two before Latin, which one of its German advocates states brings boys of the same age as far after two as formerly after five years of study of it. I plead for the great majority who begin Latin and abort at an age when use and pleasure should be more associated than they are here, and for an education that means growth, in the sense of laying down tracks over which more of the traffic of later thought and life will go. If it must be that the great majority who begin the high school do not finish, instead of focusing our energy upon the few who get to college, we must so teach that pupils will be best fitted to leave at any time; or, if they do leave, shall not do so because they are gradually disenchanted by difficulty or aridity, or grow restless because they find other things in their new horizon more interesting, or have growing confidence in their own powers of choice, or are discouraged at the vista of years of work for which they have lost heart, and so, without fully knowing the cause, life attracts them more and school less, till, in Chinese phrase, they "lose face" and fall out, when if, as Professor Hanus well desiderates, the life of the community had vitalized the school, the moral waste of abandoned beginnings would have been saved.

English properly outranks all other studies, being often required of all, throughout the entire high-school and early college course. No topic counts more points in examination; often the English of papers in other subjects is considered a part of English, and marked deficiency here debars from all courses. But the first great violation of nature's law of mental growth here is that form not only precedes but outranks content. The Cornell catalogue typically states that "in every case the University examiner will treat mere knowledge of the books as less important than the ability to write good English," and most colleges lay great and expressed stress upon spelling, grammar, a

knowledge of sentence structure, punctuation, paragraphing, etc., while rhetoric and style are excessively and prematurely emphasized, and the study of English literature often comes only in the last year or two of the high school. The college task-masters are themselves often stronger in English philology than in wide and sympathetic knowledge of English literature, or at best, are more critical than creative, fonder of minute and careful reading of a few masterpieces than of wide, general knowledge which the youthful mind chiefly seeks, and this is reflected in the copious annotations and the text-books. Wherever this method really takes root, and it rarely does in the youthful mind, we see its results in the ultra-fastidious effusions of the best writers for college journals, whose art culminates in the over-refined elaboration of some petty trifle, all form and no content, of a kind which constitutes so many of the illustrations of decadence cited by Nordau. The old slogan is that, if anything is done at all it must be done in a minute and exact way, and the prim and precocious proprieties of Addisonian syntax are rated higher than the more unconventional virility of a Kipling. The progressive feminization of the high school is perhaps also seen in the standardization of Tennyson's "Princess," much of which the standard boy of the middle teens regards as saccharinity ineffable.

How different all this from the standpoint of those who believe in consulting human nature and needs. On entering the high school the average child has essentially passed the stage of juvenile reading. Animal, detective, wildly romantic, and outlaw themes are on the wane, but there is a rapid rise of the curve of normal interest in travel, biography, exploration, adventure, literature with abundant action, perhaps dramatic, but always somewhat exciting and adventurous. Every census, now scores in all, shows that in the early teens there is for the average child something of a reading craze, as if now for the first time the mind took flight in the world of books. More are drawn from libraries; more pages and more varieties of themes are sampled than at any other period up to perhaps the middle of the college course. The youth has a passion for reading

things somewhat beyond his own experience. It is the age when Edison resolved to read the Detroit Public Library through, and read twelve solid feet, and then, as he says, stopped reading forever. It is, however, the reading of the prospector and not of the minor, the age of skipping and sampling and pressing the keys lightly, until something absorbing is found that feeds the soul. Girls, who always read most poetry, not only like most that boys do, but exceed them in preference for books by woman authors which boys eschew, also in those which center in domestic life and with children in them; and only after considerable experience with this freedom does any natural sense of style arise, or any strong impulse to express some embryo content of the mind, which is the bud of literary activity. School pressure has had much to do in either suppressing or arresting this passion for reading by hastening to control or direct it, or develop a critical state of mind that suppresses the creative impulses that are now putting forth their first tender buds,

Again, at no stage and in no department of psychic life are the receptive powers so far in advance of those of expression as here. Plasticity is at its maximum and utterance at its minimum. The mind is a sensorium, responsive to everything in the environment, but the very abundance of traffic inward obstructs the outward currents. Boys especially are liable to be dumb-bound, or almost aphasic, save in their own vigorous and often inelegant way. So many new things are reverberating in the new life to which the soul now awakens, that nature prompts a kind of modest reticence for which the deflowerers of naïveté of the callow, ephebic soul should have some respect.

Again, good English really lives on the short circuit from eye to tongue, which is, we know, many ages older than the new long circuit eye-and-hand method of Cadmus, which the best historian of French literature well shows that its golden age was when conversation dominated style and the worst when people talked bookishly. Children in school cannot all talk at the same time as they can all write or read at once, so that the old method in literature of oral transmission before printing arose has turned school-work so largely to writing that the graces of speech and reading aloud and story-telling are too often subordinated.

I doubt if among all the recent triumphs of the uniformitarians any has been worse than marking off a definite quantum in this great field, or more violence done to both the subject and the youthful mind. The wide acceptance of these requirement books and authors marks, I believe, a pedagogic decadence, which in a future far nearer than we dream will be pointed out as the low water mark of English teaching which the last century can show, and as one of the most disastrous triumphs of mechanism and convenience over mental needs. Some universities hold out againts it, like the Stanford, which offers five large groups of books and authors, including even the gospels and parts of the Old Testament, from each of which the teacher may select any one or more, and not only that but any substantial equivalent of this will be accepted, the university freely undertaking all the additional labor and setting and reading papers in some way, which must make the over-organizers gape and stare. We cannot, perhaps, so at least the great variety of choices of the hundred best books indicates, even reach anything like a biblical canonization of the things really best and most classical for youth and have a school Bible, as a late English writer wishes. Whether this great task was considered or even seen by our English committees, I do not know, but we have a most suggestive approximation to it in the new *Deutsche Lesebuch*, by Hopf, Paulsiek, and other secondary teachers of German, in nine volumes of over 3,602 pages, published during six years ending in 1898. The page is large; the type is a model; and the paper and binding so cheap that each child can own his library. The work begins in octavo, and in the lower grades great prominence is given to saga, legend, *Märchen*, fables, proverbs, hymns, a few prayers, Bible tales, etc. Every department and period of German literary history, from the Niebelungen down to a few living writers, is drawn on. Many careful digests of great standard works embodying salient phrases and quotations from the original, epic, lyric poetry, exploration, adventure, biography, and even jests and humorous tales, which, it is explained, must all be read as a part of the course in English with a little of it studied in detail and memorized—all this marks a new and important

step toward the practical solution of the great problems of language and literature in secondary education, which should be pondered. It is no mere aimless anthology or chrestomathy like Chambers' *Encyclopaedia*, but is one of the best products of prolonged and concerted study of how to best draw upon all the sources of a great national literature in a way to best feed each nascent stage of later childhood and youth, so that profit and pleasure are best combined and so that the chief end of reading for the young, which it should not be forgotten is primarily ethical, is not ignored, and the literary instinct is allowed to irrigate a wide field instead of encouraged to cut a deep cañon and leave desert plains on either side.

I have no time here to speak of algebra, almost purely formal, nor of other topics which I shall speak of later, but pass finally to the question—what are the causes of this pedagogical decadence? First, I think we must place the iron law of maximal ease which has made sophists, literalists, methodasters. To drill and break in the youthful mind is easy. Under no conditions can a precisian so dominate as at this age, when the soul cries out for wholes, not details; for facts, not formulæ; for crude masses of information, not for accuracy or analysis; for growth, not for logical order. Wherever we insist upon accuracy and finish, we are forcing nature, which decrees that youth should be kept plastic and growing. This evil is directly as the teacher's ignorance. Inadequate knowledge on the teacher's part is the chief high-school evil which instinctively seeks shelter, dignity, and ease in formalism.

A second cause is lack of knowledge of the nature and needs of youth and the laws of mental growth. Our colleges and universities have not cultivated the true psychology of education, which is essentially genetic; and our academic chairs in this and allied departments, while often filled by men of the highest ability, whose achievements have justly won wide recognition, have persistently maintained toward genetic psychology, which is only the higher evolution entering the field of mind, the same attitude of indifference or even hostility that Agassiz maintained toward evolution. The analysis-plowing and cross-plowing of

the adult consciousness, of late so overdone, can, as has been truly said, render little service to teachers and may even do them harm. But without knowledge of the later genetic stage of adolescence, teachers are handicapped by an ignorance which hinders much of their best work, at best provincial, because failing to recognize that the cultivated adult of today, whose mind is so overstudied and overexploited, is only a single stage of the development of mind in the world. Introspection even aided by new laboratory methods, can never restore the lost or losing ideal of the possibilities of adolescence, which has a new message of humanism to the world of education from a source richer and more original than that which was opened to the teachers by the Renaissance. It reinterprets and enlarges all traditions of liberal education by insisting that the only way to fit for the next stage of training is to exhaust the possibilities of the preceding stage, and which would supplement knowledge and love of subject-matter by that of youth, devoted ministry to which makes teaching, as it always is at its best, the lasting and crowning manifestation of the parental impulse.

Third, the most important principle of the Committee of Ten is that the subjects should be treated alike for those who go to higher institutions and for those who do not. Only if these two classes of pupils differed very widely in ability would this principle be false; all admit that each topic must be treated in a different manner in schools for subnormal children just as all buildings cannot be begun in the same way. In a large and general sense, I believe it is profoundly true, but has nevertheless done incalculable harm and has been calamitous in its results. First, because, through no fault of its literal form, it has been very widely understood by parents and pupils to mean that the best way for all to begin in the high school is to start to fit for college; and that thus least will be lost and most gained even if they never get there. Thus certain topics are begun and arrested before they have been carried far enough to yield practical results for life, such as could be secured by less proficiency with other topics. Secondly, it has been calamitous because often associated with the absurd postulate of the equal

educational value of all topics if taught equally well. This is almost the apotheosis of formalism against content-studies. It has affected the choice of topics unfavorably, and is one partial cause for the excess of Latin. But, third, the chief harm of this dictum itself is that it has reinforced the assumption that the methods and subjects in vogue for those who go to college are the best. It is true that all topics should be treated alike, but the methods should be genetic, while the dictum has reinforced the logical method because it was in the field and sanctioned by the colleges, whose methods when transferred to lower adolescent stages do them great violence. By thus laying excessive stress upon the logical, scientific methods, fitter for college than high school, and discrediting everywhere genetic methods, incalculable injury has been done, whereas if these latter had known and recognized as normative and the principle of like treatment had diffused and reinforced them, good and not harm would have resulted.

Lastly, we have in this field to face great and growing dangers that threaten the dignity and independence of secondary teaching, which must know, be, and do things that higher education knows not of. Thring, Arnold, and the founders of Schul Pforta did not owe their eminence to their success in meeting requirements of universities, because in most European countries entrance examinations in our sense are practically unknown. The high-school teachers are now exposed to dangers akin to those of small merchants who drift to great department stores in the city. They become clerkly, like office lawyers working under orders. They seem content to sit as lay figures in the councils of their own government anxiously awaiting the assignment of their stint with the spirit of faithful and devoted servants, honored by the confidences of their masters. In France, where over-organization has done perhaps chief harm, it was lately seriously proposed that they wear a uniform or livery. In England, Germany, and France, where the universities all once conducted entrance examinations, they were long since essentially abolished. Even in England, that land of examinations, they were given up in the second quarter of last century according



to Mark Patterson, because they could not be made adequate tests of power, and in Germany and France, because of the increasing power of trustworthiness of teachers in the secondary schools. The present, almost feudal, dominance here of colleges or universities over the work of this grade is something that in its methods is without precedence in other countries or in the history of education. Many high-school teachers in the Middle States and New England are ready for the mere convenience of fitting for one examination of a joint board, instead of meeting the differing requirements of college, to sell their birthright and independence. High schools and their pupils have doubled within the last decade and are now over saturated by college interests, because these were more alert and first to assert themselves in the new and widening high-school field. When the public high school really becomes, as it surely will, the people's college, permeated with the ideal of fitting for life, which is a very different think indeed from fitting for college; then secondary education will become truly democratic; it will have plenty of local color and fitting for colleges will become, as President Jordan well says it should be, a mere incident. The public high school will say to the college, fitting is not our chief business; you are not our pace-maker; our business is to do the best we can for you at this stage; take our finished product or leave it, but if either of us bend, it must be the college.

The greatest need of adolescence today in New England is another association of public and English high-school teachers, working independently of the college and in the service of the great public that supports the high school, interpreting its needs and striving to fit for life and not for college. Without some such new departure the work of this association, which has done so much good, but in so much of which we hear the jingle of the keys of the college wardens, will grow still more one-sided and its work be still more overdone. Such a high-school renaissance would show no longer an increasing number of male teachers, who drop out because they cannot be true to their own convictions in a noble, manly way. It would bring to the front a class of high-school leaders less supple and less servile, and more

devoted to do their best to develop youth at a unique and most critical stage of life, and free this work from the dominance of college professors, who would do more for science if they gave to productive research in their own departments most of the time, now often worse than wasted in dictating to high-school teachers and increasing the now excessive number of high-school text-books, and in other ways recruiting for their college.

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THE PRESIDENT.—The discussion of Dr. Hall's address, according to the announcement on your program, will be opened by President Eliot.

PRESIDENT CHARLES W. ELIOT, of Harvard University.—*Mr. President, Ladies and Gentlemen:* With the greater part of what President Hall has just put before us in so interesting and instructive a manner I cordially agree, so much so that it would not be interesting to you if I should survey at all the greater part of his lecture. I should have to repeat constantly phrases of complete agreement. I had hoped to have an opportunity to study beforehand what President Hall was going to read to you this morning, but as I only received a brief abstract of his address this morning at a quarter past eight, I have been unable to make that careful preparation which his own reputation and this audience would otherwise have required of me. I must, therefore, limit myself to comments, spontaneous comments, upon the few points touched by President Hall with which I do not find myself able to agree.

It was an admirable description of adolescence which President Hall put before us. He described that wonderfully fruitful period of human life with an enthusiasm which I am sure we all shared; and with every word of what he said in that connection I felt the most cordial agreement. Nevertheless, I must confess to some misgivings with regard to the existence of any well defined period in the ordinary span of human life, of any period which can be given a beginning and an end and be said to have remarkable characteristics of its own. I noticed that President Hall believed in a definite period which might be called boyhood, which period was well adapted to what he called habituation or drill, and that this period was succeeded by a period well defined in his mind called adolescence, and that this second was succeeded by a third period which might perhaps be called maturity,

itself well defined. Now, that is where I stagger in my effort to follow President Hall. I do not believe that there is any period of human life between birth and death which should be devoted to a process of habituation or drill; and I know no portion of human life less adapted to drill than boyhood. The adult is infinitely more capable of advantageous drilling than a child. Drilling is a highly mechanical process, intended to produce a mechanical end. It is at its best in a factory. Is a factory the kind of place which we think appropriate to boys and girls? It is at its next best in an army, and the object of drill in an army is that one man may be able to hurl a hundred thousand men at the peril of their lives in a given direction at a given moment. Is that an object which we set before ourselves as teachers? I am inclined, therefore, with deference, absolutely to deny that boyhood is a period characterized by the necessity of habituation and drill. I should reject both those operations as applicable—that is, fortunately applicable—to childhood, though I have to admit that in the infirmity of human nature a good deal of that sort of thing is now administered to children.

And now about adolescence. It is in Dr. Hall's mind characterized by an outbreak of the imaginative and instinctive powers of the human being. Perhaps it is characterized to the adult mind looking on by such an outburst, just as a peach tree in the spring is characterized to the human mind observing it by a pinkish, purple blow which appears, apparently, suddenly. Now it seems to me that the bloom of adolescence is no more sudden than the bloom of a peach tree; that it is long prepared, that every power which appears in adolescence to spurt forth, so to speak, has been long prepared. And I should not be able to say that a youth of sixteen or eighteen was more imaginative than a child of eight or ten. I have seen many children of eight or ten who were imaginative beyond anything that I could ever conceive of being myself. I have seen many children who were vastly more imaginative than many youths, adolescents, if you please, of my acquaintance. Whatever power suddenly appears in the adolescents must have been stored in that growing human being before, just as the bud on the peach tree stored the processes which flash upon us, to our great surprise and delight, the bloom, when the forces of nature make it time for the peach tree to bloom. I am not at all sure, further, whether the contrast which we observe between the rapid development of adolescents and the comparative stagnation of the age from twenty-five to forty-five, if stagnation there be, should not be looked at, not as proof of the

superior capacity of the adolescent, but as proof of the unfortunate stunting of the adult. It does not seem to me likely that God meant that mental growth should be slower after twenty than it was before. Is not the cause of the slower rate of development and production, as years go on, the morbidity of the older person, the stunting of the older person? By what? By the mechanical, uninformative, narrowing effects of the indispensable earning of the livelihood. That is what stops growth in most human beings.

It is not then, I submit, sure that the adolescent period is a period of transcendent power. It may be that rapid growth takes place at that time simply because the human being is then freer to grow, freer to develop its native powers; and then as years go on the outer forces of the world check that growth, diminish that expanding power, and leave us all short of the promise of our youth. I say this because I have never been convinced that there were really clear, well-defined periods in human life to which different disciplines were to be accommodated. My fundamental belief is that love and freedom and the nursing of nature would make human life a progress, a growth, an expansion, a triumph, from beginning to end. I say this because I doubt the wisdom of attempting to accommodate methods of teaching to particular periods of the human infancy. I believe the methods of teaching should be all one, from the lap of the mother to the lap of the university.

The preamble of President Hall's address, interesting and instructive as it was, was followed by what most of us probably found more interesting, namely, his comments upon the teaching of certain subjects in secondary schools. I pass to that portion of his address. The condition of physics in secondary schools, as described by President Hall, must be decidedly deplorable. Is his description accurate? Has he got a real basis of fact? I am in position to see the results of the new training in physics as brought to us at Harvard College now for ten years past, from an ever increasing number of schools and in an ever increasing number of individuals. It seems to me that the results are highly creditable both to the schools, to the projectors of the methods employed in the schools, and to the individual pupils who bring to us the evidences of their attainments. So far as I know, the colleges that have really carried out a requirement in laboratory physics have never thus far expressed any dissatisfaction in the returns. At Harvard we have seen with great approval the progressive substitution of laboratory physics for book physics, which

has gone on continuously since the laboratory requirements were introduced. I have no doubt that the future will see a great improvement in the teaching of physics in the secondary schools, as also in the colleges. I have no doubt that we shall see better and better teachers employed for this purpose in the secondary schools. There has hardly been time enough yet to furnish the secondary schools with highly competent teachers of this subject. But I desire to express my cordial sympathy with what President Hall said of the importance of keeping before the pupils' minds not only the hero-ology of physics, which is a very interesting subject, but general principles and general results, and attending here, as everywhere, to the contents as well as to the method. I cannot agree with President Hall that qualitative experiments in physics or chemistry are better than quantitative for the youthful mind. The reason I cannot agree with him is this: I believe, and have long believed, that one of the things we need to do more and better in all our schools, primary and secondary, is to cultivate the powers of observation in the children or the youths. Now, quantitative experiments in physics train to a higher degree than qualitative the powers of observation.

English was the next subject on which Dr. Hall gave us some interesting observations. It must be confessed that the result of introducing elaborate training in English into the secondary schools and colleges is not yet satisfactory. Was it reasonable to expect that it should be? Twenty years ago there were very, very few colleges in this country that required any English whatever for admission; I think you could count them all on the fingers of one hand. The real question is whether the hundreds of thousands of American children now at school are getting a better knowledge of their native language and literature than they did forty years ago. I conceive that there can be but one answer to that question. They are getting a vastly better knowledge of their language and literature than their predecessors of the former generation. Again, I must say that I agree with every word President Hall said about the superiority of contents to forms in English instruction, and the inevitable tendency of the systematic teacher to dwell on the forms rather than on the contents. President Hall's criticism is valuable because he speaks so strongly of the superiority of the contents. But I know no clearer gain made by American schools in the last thirty years than the gain in the teaching of English; and I know no point at which American experience has been more perfectly brought to accord with the experience of the continental

nations of Europe in teaching their native tongues. We have never done in our country what Germany does for German, or France for French, or the Scandinavian peoples for their language, or Russia for Russian; we have never done it, and now we are doing it, and so we are coming into accord with the nations experienced in the development at home of the native language.

The main difficulty, in my opinion, about the teaching of English in schools and the results of that teaching, is due to this: When the teaching of the school in any subject is isolated in the life of the child, the reaching of satisfactory results in that subject will be slow. It will require generations before the best results of new experiments can be reached. So long as a child lives at home in an atmosphere of bad English, it will be very difficult for the American day school to make that child's English good, either in speech or in writing. You must have time enough to work upon the entire population in regard to knowledge of English before you can get really good results with the children of the day. It will be just the same in any other language—I might say almost in any other subject. It is extremely difficult, that is to say, to give a really high education to a child whose home conditions are adverse to a high education. Therefore, before we complain bitterly of the failure of the school to bring high results in English, wait until we have had time to affect deeply the American home.

President Hall found the Latin statistics of the last few years curious and perhaps deplorable. I am inclined to believe that the increased attention to the subject of Latin may be in part due to the large reconstruction of school programs which took place within five years after the publication of the report of that Committee of Ten of whose capacity President Hall evidently entertains no very high opinion. The general effect of those programs was, I think, to make more serious the studies of the American high school, and to limit their number, so far as the individual child is concerned. It gave the child freer choice of studies, limited the number of studies for the individual, and, to my thinking, made the high-school course for an individual pupil more substantial. One of its effects was, I think, to increase the attention paid to Latin. If one considers the rather limited number of subjects which it is possible to teach well, or reasonably well, in an American high school, one will hesitate, I think, to tell children that they had better not take Latin, if they are competent for Latin and take it of their own choice. We all perceived what an

immense importance President Hall attached to interest as the motive in study for children. He cannot possibly exaggerate the importance of that motive. But, unquestionably, within the last twenty years, the pupil in the American high school has had freer choice of studies, and one of the effects seems to be that more of them are interested in Latin. Are we prepared to regret that? Certainly Latin has proved itself to be an admirable method of studying language. Moreover, are we encouraged by what we have heard today to recommend the children to study English? Are we encouraged by what we have heard today to recommend them to study physics as now taught? I gathered that President Hall did not think well of algebra as now taught. It is almost impossible to believe that French or German as taught in the average American high school can be a better subject than Latin. What remains? What shall the child do? For one, I never should wish to take the responsibility of advising a competent high-school pupil who desired to study Latin not to study it. That is, after all, the practical point, ladies and gentlemen, as things are. Shall we advise the pupils in our high schools not to study Latin, or English, or physics, or algebra, or French, or German?

I come next to a few remarks on the labors, or rather the outcome of the labors, of the Committee of Ten. I want to say first that that committee had before it a practical problem, not a theoretical one. I shall have to confess at once that in the meetings of that committee I never heard the word psychology, or the word paidology, uttered; and I doubt if any member of that committee was affected in his labors by any psychological considerations. Their problem was an absolutely practical one. What can they recommend in the way of changes for good in the existing programs of American public schools? President Hall is precisely correct in saying that one of their principles, on which they agreed unanimously — and really it was a committee which represented a great variety of opinion and experience — one of the opinions on which they agreed unanimously was that the public high-school programs should make as little difference as possible between the studies of a boy or girl who was going to college and the studies of a boy or girl who was not going to college. That is a principle that I believe in root and branch, and hold to be a beneficent principle in the organization of American education. Perhaps I should fear to speak of any organization of American education; but, after all, when you have got millions of children to deal with, there must be some organization. I know no more fruitful or productive principle in the

organization of American education than that one, or one, in my judgment, more absolutely beneficent in the present, or more likely to be in the future, far or near.

What is the reason for these convictions? In the first place, there is the reason which the Committee of Ten gave in their report. Thousands of high-school pupils do not know whether they are going to college or not; therefore, postpone as late as possible that fateful decision, postpone as late as possible the forking of the ways in the high school. Carry to the college or the scientific school every child that can be led that way, and put no obstacle in the way till the latest possible moment, no obstacle created by a too early choice between diverging roads. In the next place, that principle is founded upon this conviction, that the distinction between training for college and training for life has no foundation whatever; therefore the training of a youth from fourteen to eighteen should be one and the same, whether he is going into college or going into business, that is, going to earn his living. The training should be as nearly as possible identical, because the college life is not different in the powers it calls for, in the motives on which it relies, from what we obscurely call life, that is, life outside the college. I have seen thousands and thousands of college youth passing through what we call a college, scientific school, or university. They stay there from four to seven years. The powers they acquire, the motives they exhibit, the characters they form, are just the same kind of thing that ought to characterize at the same age all the other youth, once their comrades at school, but now gone out into the working world to help the families to which they belong, or to earn their own livings. Human character in the college-trained person ought not to be a thing distinct in the least degree from human character in the laboring classes. The heights of human character are all one in level, in grade; they are not diverse. The intellectual powers which give success to a college student are just the same as those which give success to the manufacturer or the merchant. They are a firm will, good sense, alertness, industry, and high aims. After all, human beings, as they develop in the different careers of the world, manifest similar powers, similar characters, unless stunted by untoward conditions and circumstances. We do college life a great wrong when we try to separate it from other human life at the same age. We undervalue that other human life at the same age when we think of it as something necessarily inferior, as necessarily not affording to the youth the means of developing character and of winning happiness.



The longer I live the more I am persuaded that the great sources of happiness are open to every human creature, and that education has very, very much less to do with that happiness than we imagine ; and the clearer I become that as regards character and happiness and the true worth and dignity of human nature, and of life, the precise career or occupation which a man has in the world, and particularly the amount of money he gets, has infinitely less to do with the result than most men suppose. If these things are so, that distinction between training for college life and training for life is a complete delusion ; and if that is so, then the education of the boy and the adolescent, whether going to college or not, should be as nearly as possible identical for all future careers, and particularly identical as regards freedom. His moral career, his career for happiness, is going to be the same, whichever issue comes to him in after years.

Near the close of his excellent address President Hall had something to say about the dominant quality of colleges and universities in this country — dominant, that is to say, over schools, and contrasted it with the position of continental universities in that respect, and intimated that the continental university exercised no such power as the American university. To my thinking there is just the grain of truth in that statement which may make it delusive. What is the reason that the continental universities do not examine for admission ? What is the reason that the examinations of the continental universities of Europe are not so generally taken, I may say are not so influential, as the examinations of the American universities ? Simply this, that the function of admitting to professions, including the profession of teacher, and the function of inspecting, examining, and giving certificates of issue to the secondary schools, is a governmental function.

If we had in this country competent government inspectors for all the primary and secondary schools in the United States, and nobody could go out from a high school with a certificate without passing a government examination, then we should not need the admission examinations of colleges and universities ; then Harvard College would be absolutely delighted to be rid of admission examinations in all departments ; then we should do as the German university does, and take in anybody that brings us the government certificate of having graduated at a high school. We have no such government inspection and examination, and the American colleges and universities have attempted, imperfectly it is true, to provide a substitute for that government

control. You, of course, remember that admission to every profession in Germany or France is determined by government examinations. We are, I am happy to say, approaching that condition in this country in regard to some callings. The approach, however, is very gradual and the goal is distant. In the meantime, the universities undertake to exercise some wholesome restraint and regulation in that great field.

These, I think, ladies and gentlemen, are the few points on which I am able to offer you some comments on the admirable address of President Hall.

MR. EDWARD H. SMILEY, Principal of the Hartford High School.—  
*Mr. President and Ladies and Gentlemen:* I am sure, if I could follow my own inclinations at this moment, I should ask to be excused from participating in this discussion. I have been intensely interested in the able and suggestive address of President Hall and in the masterly discussion which followed it. It would seem to me almost more profitable to leave with the people assembled here the thoughts as they have been presented, than to continue the discussion from the standpoint of the secondary school. With many of the propositions advanced in the first address, that of President Hall, and in his able paper, equally suggestive, which appeared in the *Forum* of September, I find myself in most hearty accord. That there are problems calling for careful, intelligent study on the part of the secondary-school teacher, it seems to me needs no discussion to establish. But I must confess to a feeling of shock and surprise when I read in this article in the *Forum* the severe and sweeping indictment brought against the teachers of the secondary schools. May I read from this article?

The transition from the grammar to the high school in this country corresponds far better than the European system to the need of changed environment at the age of fourteen; and this constitutes a rare opportunity which has, however, been thrown away. Although education, as we have seen, begins here, and many races have no other than a brief training at the dawn of the ephebic period, by a strange irony of fate secondary education has more or less lapsed to a mere link. Its functions are partly those of preparation for college, and are partly shaped by the mere momentum of the lower grades. The high school has lost its independence, and, of all stages and grades has least interest in the large problems of education, namely, what to teach and how, in order to develop the nascent periods during the teens and to save powers now new-born in most profusion, but sure to be atrophied or perverted if not studied with tact and federated with individual adaptation.

For all these problems as a class, high-school teachers care less than those of any other grade, if, indeed, they suspect their existence. For them adolescence is just a stage when children are so much farther along than in the grammar school, and know so much less than they must to enter college. For such teachers the task is simply to convert their pupils into freshmen, and they await with hope or fear the assignment of their stint in the form of college requirements. They have abandoned all initiative; have renounced their birthright of interpreting, and ministering to, the needs of one stage of life; have had little professional training; have little interest in education in the large meaning of that term; and care little for work of the lower grades. Their motto almost seems to be *Non vitae sed scholae discimus*. The result is that boys, who insist more on their own individuality, leave the high school; in the country at large about 60 per cent. of its pupils are now girls. Noble ideals are gone; the independent function of the secondary stage of education is almost abandoned; and the pupil and teacher devote themselves to a routine of tasks in an artificial program imposed by the will of others, and fitting not for the world but for college.

I have said that that presentation, that view, came to me with a shock of surprise, with almost a feeling of indignant, of vigorous, protest. The thought came to my mind of the large body of cultured, able, devoted men and women engaged in the work of the secondary school. The work of the high school is "shaped by the mere momentum of the lower grades." I would not for one moment bring a word of criticism against those who are engaged in the work of the grammar school. I believe that it is a matter of congratulation that in larger and larger degree the work of the grammar grades is enlisting those who have had a wide college training, but is it not true in a larger degree that the work of the secondary school is in the hands of those who have had the best training that our colleges and our universities in this country and abroad can give?

I wonder if I shall be pardoned, if I speak of some of the experiences in our own school, because I am best acquainted with that. We have a school of a thousand pupils, and I find here again a difference, as indicated by the paper, in the conditions there existing as compared with those generally found. The thousand, less twenty, are about equally divided between the sexes, as many boys as girls. Our teaching force consists of forty teachers, beside myself, and again the number of male teachers is just about equal to the number of female teachers in the school. And I find, too, in looking over the list of those with whom it is my privilege to be associated in the work of the school, that Harvard College, and Yale, and Brown, and Amherst; and

Dartmouth, and Williams, and Michigan University, and Smith, and Mount Holyoke, and Middletown, and Trinity, and two or three of the universities abroad, are represented in our teaching force. Certainly it would seem to be impossible to me to believe that in schools thus constituted as to their teaching force, and I assume that the conditions in other large schools are just about the same, the make-up of the teaching force just about the same, that we are carrying on our work in the hopeless, desolate, dreary fashion described in this article. If I may again speak about the conditions, are we recognizing the needs of the young people in our secondary schools? Why, it seems to me that the generosity, the magnificent generosity, with which our communities equip, build, furnish the buildings in which the work of the school is carried on, is evidence that to the community the high school holds a very dear place.

I find myself not in accord, also, with the idea expressed in the paper that nothing can be done until the high school takes a stronger hold on the interest and affections of the pupils. Why, it seems to me, as I have said, that the character of the equipment with which we are supplied by the generosity of the communities shows that the high school has a deep hold on the affections of the parents, and of the pupils as well.

Again, do we not recognize in the high schools, the public high schools, the needs of the pupils in the character of the training that we are endeavoring to give them? We recognize that our youth need training to develop sound bodies. In our schools more and more is it coming to be true that we are equipped with gymnasiums, with physical instructors, both for the boys and for the girls. As it seems to me, no one of our teachers in these large schools can exert a more helpful influence, not only in building up good bodies, but in building up good spirits for the bodies, than can the instructor in the gymnasium, and in the choice of such instructor I am sure the greatest care is necessary. But given an instructor who knows the boys, who is morally clean and pure and good, and I believe that the influence exerted by that instructor cannot be measured.

Again, in the equipment for manual training we recognize the need of the individual. In the school with which I am connected about 125 boys are taking some form of woodworking, 150 boys are taking constructive drawing, 50 boys are taking metal work, 50 or 75 girls are taking some form of domestic science, so that here opportunity is given for the individual aptitude to show itself.

If I might be pardoned for one other reference, we are trying this year, in continuation of the trial begun last year, to get at the individual need in this way: In our daily programme we have six recitation periods. No teacher on the force has more than five periods, but the sixth one is given for the purpose of getting as closely in touch as possible with those who may need the individual touch.

In this way, then, do the large schools serve the purpose for which those who support them have established them.

The dominant influence of the college has been referred to. I wonder if those who are engaged in the secondary school would not agree with me that no force is more potent for good in the school, in every department, than that which emanates from a strong, vigorous, classical department in the school. We feel the effect of it, and we prize that influence.

MR. SAMUEL THURBER, of the Boston Girls' High School.—*Mr. President*: I hope a great many teachers who heard the last gentleman will procure the *Forum* and read President Hall's article. I can't imagine why it made that gentleman so melancholy. I find it exceedingly stimulating, and I have shown it to many others who also found it so. I am very sure it will be the most wholesome reading you could do (applause).

PRESIDENT ELIOT, of Harvard University.—*Mr. President*: Before we adjourn it seems to me that we should like very much to hear again from President Hall.

PRESIDENT HALL, of Clark University.—*Mr. Chairman*: I won't detain the association. I did jot down two or three points, which, if you will bear with me, I will mention very briefly. First of all I beg to apologize to President Eliot for not sending the abstract of my article earlier. I mailed it Thursday, but it was delayed on account of unavoidable obstacles. The paper was put together from lecture notes, and I had not finally decided what points I wanted to lay stress upon. I especially regret that President Eliot did not receive this earlier, because I think that most of the objections which he has raised will fall to the ground of themselves when he considers what I actually did say.

For instance, I believe in the great advantage of the report of the Committee of Ten. I think it is the most important thing in the educational history of the last ten years. My contention only is that the momentum in that direction is spent, that it has been overdone, and

that these magnificent blocks of baled knowledge, so many credits, so many hours, such a standard, forty, sixty, all doing the same thing, the old ideas, are not, I think, quite the way of life. There is a little vitality. The methods are those that come from mechanics, it seems to me, more than from the great field of life. Man must now-a-days study just so far, so much. It is the same tendency, it seems to me, that we see in mechanics to standardize things. Now we buy flour of such a number, screws, nails, which are of such a number; we know just what we are going to get. I hardly believe that we can standardize knowledge in quite that way, as is presupposed by the tendencies now in vogue, and have one grand bureau of assay such as was discussed here yesterday afternoon (laughter). It seems to me it is not the way of life, but rather the way of decadence.

There are all kinds of ways, and there still ought to be, of getting into college, especially where the college is a public one, a state university, as distinct from the endowed one. Years ago, at Johns Hopkins, a bright young fellow of eighteen was putting on a tin roof, and came down at noon into the library, in the summer vacation, took up a mathematical journal, and the mathematical genius in him sprang into sudden life, and he is now an eminent professor of mathematics. I believe it was Professor Bayard, the eminent biologist and fish commissioner, who chased a rabbit under a library in Albany one Sunday and there found works on biology. All of a sudden his talent flamed up, and he had his career. He did not have to study just exactly so long. There is more than one way. You can enter college through the roof or through the floor, and it has been done, and I think there should be room for this.

As to the habituation, I cannot think that on mature consideration of the history of knowledge, and especially of education, what it has always meant from the time of the alphabet and the multiplication table, what it means when memory is at its best and when habits are formed, what it means when the brain is at its most plastic state, I cannot believe that on mature reflection of what the history of education means, President Eliot will quite want to stand by all he has said about habituation not being somewhat of a specialty at this early age. I agree with all he said, and was very much edified and very much instructed, too—it was a very suggestive view, to me at least—that probably we are all stunted, he thought not much by the school, but especially by the necessity of earning our bread; that most men are, the average young

man is. I think that is a very great and a very important aspect of the study of all this whole vital period.

In the matter of the relations between fitting for life and fitting for college, I think there is a real point of difference, if I understand President Eliot, because it seems to me that fitting for college is a very different thing from fitting the great majority of people who go out before they get through the high school. In the country at large the vast majority of pupils who enter the high school go out into life. Our problem, I think, should be to fit those who go out to go out just as well fitted for life as those who go on and go to college are fitted for college. College and life have both a professional aspect. They are both parts of professional training, if we consider that fitting for life means fitting for occupation and for bread-winning. But there is another point of view, namely, fitting for growth, development over the largest possible area and bringing to the highest maximum maturity; and that is the foot rule by which all our educational methods, and church, and state, and everything else will be measured eventually — whether they do bring into the fullest possible maturity.

I think I was a little misunderstood, or else misstated myself, with regard to the principle, the fundamental principle, of the Committee of Ten, that all should begin the subject in the same way. Perhaps there is a little difference there. I said I accepted that principle most heartily, but I thought the evil of it came in its interpretation, that we assumed that the way to fit is the way we do it now, when I think the way to fit is the way we do not do it now. If my interpretation is put on this rule it is all right; the interpretation which is now put upon it, in my belief, is all wrong. It is that so much stress is laid upon the formal side. We should fit so that the young person is best qualified, best trained, to leave school and enter upon any vocation at any time, anywhere in the course; that is the interpretation of that rule under which it is true, and that is the ideal system of education.

I do not know that there is anything else that I wish to say here. I did not quite understand whether President Eliot would have government boards do college-entrance examinations or not; I rather think not. No, no. Nor I, either. I don't know that any such boards have ever been established. I don't know that any board in Europe or anywhere ever conducts university entrance examinations; it is only the professional schools. My belief would be that a properly interpreted certification of pupils, and especially of schools, as is the universal practice in Europe, is the goal rather than this standardization.

MR. D. S. SANFORD, of the Brookline High School.—Will President Hall tell us what rejoinder he makes to President Eliot's comment upon definite periods of development within the limitations of the adolescent period, the period of youth and boyhood?

PRESIDENT HALL.—I think that in general President Eliot is entirely correct there. Of course there are epochs. There is the period of puberty, which is rather a marked epoch; it is not a sudden period, and it tapers off. Among the experts one, being on adolescence the best I know from a medical point of view, says adolescence is not complete until thirty. If that be true, then we don't need to hurry up our education so much. It has generally been supposed that complete maturity and mobility were established by twenty-four or twenty-five for the male, and a few years earlier for the female; but the tendency of these anthropological and genetic and medical studies is to interpret the period of adolescence as longer and longer. I don't think these nodes are sharp, but I think there are very distinct curves. We know there is a distinct curve of teething. We know that there is a distinct curve of the growth of the arm, of the biceps, and how it goes. And so of the intestines, the area of the intestinal tract. I think there is a period for verbal memory. I think we are approximating a time when we can construct a curve of considerable accuracy for verbal memory. I think the curve of the imagination, too, is at its best in children. Of course children's imagination is of very wild character, but the boy before puberty belongs to a different epoch, and the whole study of all this period of adolescence focuses on this one grand conclusion. I think it is one of the greatest of modern scientific achievements that the adolescent boy is in a neo-psychic stage, if you please, and the boy before is in a paleo-psychic stage of his development. The adolescent boy is recapitulating a far later stage in the history of the race than the earlier boy, and hence the instability. He has built on a new story of a more unstable material, and that is why the period is so plastic and so uncertain, and why it is impossible to remain stationary, and why errors cause relapse to lower levels.

PRESIDENT CHARLES W. ELIOT. — *Mr. Chairman:* May I say one word more, not in reply to anything that President Hall has now said, far from it, but having a little application to what Mr. Smiley said? I know no way to arrive at a just conclusion with regard to the satisfactoriness of a stage of education today except to look back and see what that same stage of education was a generation or two



generations ago. Mr. Smiley told us what the provisions are, and something of the modes of teaching in the school of which he is at the head. I think it is very consoling to compare such a statement as he made with a fact that all of us can refer to, a fact nearly seventy years old. I refer to the program of study in the English High School of Boston when first it was established, and when the first master of an English High School in Boston laid out the course of study. That was, if I remember rightly, in 1821, and a very remarkable man laid out that course of study. Mr. George B. Emerson was the first master, and he organized that school, and his program of study is printed among the programs of the Boston public schools, and can be referred to in public documents. He subsequently conducted, as some of the older ladies and gentlemen here present may remember, an extraordinarily successful girl's school in Boston, in Pemberton square. But he was much more than a teacher, he was a pioneer in the American study of natural history. His book on the trees and shrubs of Massachusetts is a classic today, though it was written more than sixty years ago. Emerson's *Trees and Shrubs of Massachusetts* remains a classic. That implies a great deal as to his mental quality, his pioneer skill, his spirit of adventure into new fields, fields that he cultivated with most remarkable success. Now let any lady or gentleman here take Mr. Emerson's first program and compare it with the program of the Hartford High School today. It is an extraordinary progress that we have made. It is an extraordinary gain in wisdom and practical skill and public liberality that such a comparison testifies to. It is a contrast that may well fill us with hope and confident expectation for the future.

And then I want to say one other thing with regard to President Hall's contribution today. It is, like almost all his contributions to the study of education, a powerful helper toward freedom, toward the realization of the content in education instead of the form, toward the reduction of an undue amount of method and schedule and control. It means, like all his work, more freedom for the child. This being the case, I find myself in a very exceptional attitude, in that I am able to criticise, or differ from, anything that President Hall contributes to the cause of education. His whole service to education seems to me to be in the right direction, and his contributions, therefore, have always been peculiarly welcome to me. I hope I had a

little bit to do with the first evidences of skill and knowledge which President Hall gave to the public (applause).

With this the sixteenth annual meeting of the association came to an end by adjournment,

RAY GREENE HULING,  
*Secretary.*